

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- 1 1. (Original) A method of optimizing a query in a multi-tenant database,
2 said database having one or more data tables, each table having one or more logical columns
3 defining data categories and one or more logical rows associated with one or more tenants,
4 wherein a plurality of tenants have data stored in the data tables, the method comprising:
5 generating tenant-level statistics for each of said plurality of tenants for each of
6 the data tables;
7 receiving a SQL query; and
8 optimizing the SQL query based on the tenant-level statistics.
- 1 2. (Original) The method of claim 1, wherein each tenant includes one or
2 more associated users, the method further including:
3 generating user-level statistics for each user of each tenant for each of the data
4 tables; and
5 optimizing the SQL query based on the user-level statistics.
- 1 3. (Original) The method of claim 2, wherein the user-level statistics are
2 stored to a user metadata table.
- 1 4. (Original) The method of claim 2, wherein generating user-level statistics
2 includes determining a total number of distinct rows for each of said plurality of users.
- 1 5. (Original) The method of claim 4, wherein the total number is an
2 approximate number based on one or more of a) a number of rows viewable by the user and
3 users below the user in a role hierarchy, b) a number of rows that are shared by a group to which
4 the user belongs and c) a number of rows that are manually shared to the user by another user or
5 group of users.

1 6. (Original) The method of claim 2, wherein generating user-level statistics
2 for a user is performed according to one of a) on a scheduled basis, b) after a predetermined
3 number of queries by the user, and c) each time an unconstrained query is run by the user.

1 7. (Original) The method of claim 1, wherein generating tenant-level
2 statistics is performed on a periodic basis.

1 8. (Original) The method of claim 1, wherein generating includes
2 determining a total number of distinct rows accessible for each of said plurality of tenants.

1 9. (Original) The method of claim 8, wherein the tenant-level statistics are
2 stored to a tenant metadata table.

1 10. (Original) The method of claim 1, wherein at least one column of one of
2 said tables includes data associated with two or more tenants.

1 11. (Original) A multi-tenant database system, comprising:
2 a database having one or more data tables, each table having one or more columns
3 defining data categories and one or more rows associated with one or more tenants, wherein a
4 plurality of tenants have data stored in the data tables;
5 a statistics generating module configured to generate tenant-level statistics for
6 each tenant for each of the data tables; and
7 a query optimization module, configured to optimize a database query based on
8 the tenant-level statistics.

1 12. (Original) The multi-tenant database system of claim 11, wherein each
2 tenant includes one or more associated users, wherein the statistics generating module is further
3 configured to generate user-level statistics for each user, and wherein the query optimization
4 module is further configured to optimize the database query based on the user-level statistics.

1 13. (Original) The system of claim 12, further including a memory module,
2 wherein the statistics generating module stores the user-level statistics to a metadata table in the
3 memory module.

1 14. (Original) The system of claim 12, wherein the statistics generating
2 module generates user-level statistics by determining a total number of distinct rows for each of
3 said plurality of users.

1 15. (Original) The system of claim 14, wherein the total number is an
2 approximate number based on one or more of a) a number of rows viewable by the user and
3 users below the user in a role hierarchy, b) a number of rows that are shared by a group to which
4 the user belongs and c) a number of rows that are manually shared to the user by another user or
5 group of users.

1 16. (Original) The system of claim 12, wherein the statistics generating
2 module generates user-level statistics for a user according to one of a) on a scheduled basis, b)
3 after a predetermined number of queries by the user, and c) each time an unconstrained query is
4 run by the user.

1 17. (Original) The system of claim 11, wherein the statistics generating
2 module generates tenant-level statistics on a periodic basis.

1 18. (Original) The system of claim 11, wherein the statistics generating
2 module generates tenant-level statistics by determining a total number of distinct rows viewable
3 for each of said plurality of tenants.

1 19. (Original) The system of claim 18, further including a memory module,
2 wherein the statistics generating module stores the tenant-level statistics to a tenant metadata
3 table in the memory module.

1 20. (Original) The system of claim 11, wherein at least one column of one of
2 said tables includes data associated with two or more tenants.

1 21. (Original) A method of optimizing a query in a multi-tenant database,
2 said database having one or more data tables, each table having one or more logical columns
3 defining data categories and one or more logical rows associated with one or more tenants,
4 wherein a plurality of tenants have data stored in the data tables, and wherein each tenant
5 includes one or more users, the method comprising:
6 processing the data tables so as to determine tenant-level statistics for each of said
7 plurality of tenants;
8 processing the data tables so as to determine user-level statistics for each of said
9 plurality of user;
10 receiving a SQL query; and
11 optimizing the SQL query based on one or both of the tenant-level statistics and
12 the user-level statistics.

1 22. (Original) The method of claim 21, further including:
2 storing the user-level statistics to a user-level metadata table in a memory module;
3 and
4 storing the tenant-level statistics to a tenant-level metadata table in the memory
5 module.

1 23. (Original) The method of claim 21, wherein determining user-level
2 statistics includes determining a total number of distinct rows for each of said plurality of users,
3 and wherein determining tenant-level statistics includes determining a total number of distinct
4 rows for each of said plurality of tenants.

1 24. (Original) The method of claim 21, wherein processing the data tables to
2 determine tenant-level statistics is performed on a periodic basis.

1 25. (Original) The method of claim 21, wherein processing the data tables to
2 determine user-level statistics for a user is performed according to one of a) on a scheduled basis,
3 b) after a predetermined number of queries by the user, and c) each time an unconstrained query
4 is run by the user.